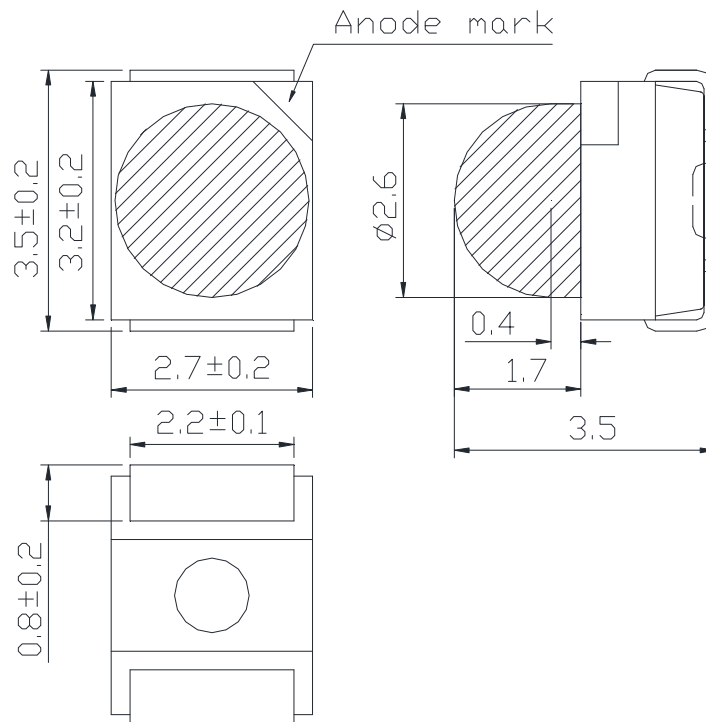


# SMT1100D-23

1100nm High Performance Infrared TOP LED

## Outline and Internal Circuit



(Unit : mm)

## Features

- Chip Material : InGaAsP
- Chip Dimension : 350um \* 350um
- Number of Chips : 1pc
- Peak Wavelength : 1100nm typ.
- Lead Frame Die : Silver Plated
- Package Resin : PA6T
- Lens : Silicone or Epoxy Resin

### Absolute Maximum Ratings (Tc=25°C)

| Item                  | Symbol | Ratings    | Unit |
|-----------------------|--------|------------|------|
| Power Dissipation     | PD     | 150        | mW   |
| Forward Current       | IF     | 100        | mA   |
| Pulse Forward Current | IFP    | 1000       | mA   |
| Reverse Voltage       | VR     | 5          | V    |
| Thermal Resistance    | Rthja  | 80         | K/W  |
| Junction Temperature  | Tj     | 120        | °C   |
| Operating Temperature | Topr   | -40 ~ +100 | °C   |
| Storage Temperature   | Tstg   | -40 ~ +100 | °C   |
| Soldering Temperature | TSOL   | 250        | °C   |

‡Pulse Forward Current condition : Duty 1% and Pulse Width=10us.

‡Soldering condition : Soldering condition must be completed with 5 seconds at 250°C.

### Optical and Electrical Characteristics (Tc=25°C)

(\*: 100% testing, \*\*: reference value)

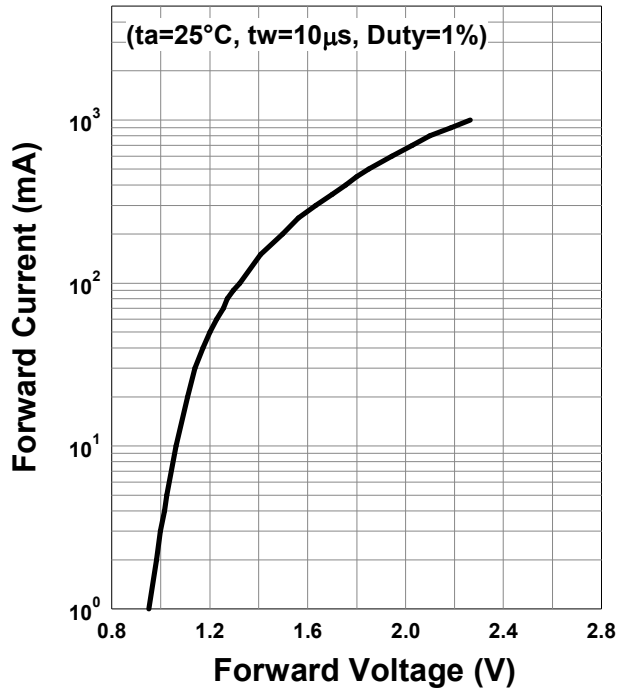
| Parameter            | Symbol          | Min  | Typ | Max  | Unit  | Test Condition |
|----------------------|-----------------|------|-----|------|-------|----------------|
| Forward Voltage      | VF              |      | 1.2 | 1.5  | V     | IF=50mA*       |
|                      | VFP             |      | 2.3 |      |       | IFP=1A**       |
| Reverse Current      | IR              |      |     | 10   | uA    | VR=5V*         |
| Total Radiated Power | PO              | 8.0  | 12  |      | mW    | IF=50mA*       |
|                      |                 |      | 60  |      |       | IFP=1A**       |
| Radiant Intensity    | IE              |      | 27  |      | mW/sr | IF=50mA**      |
|                      |                 |      | 130 |      |       | IFP=1A**       |
| Peak Wavelength      | $\lambda_p$     | 1070 |     | 1130 | nm    | IF=50mA*       |
| Half Width           | $\Delta\lambda$ |      | 55  |      | nm    | IF=50mA**      |
| Viewing Half Angle   | $\theta_{1/2}$  |      | ±20 |      | deg.  | IF=50mA**      |
| Rise Time            | tr              |      | 60  |      | ns    | IF=50mA**      |
| Fall Time            | tf              |      | 30  |      | ns    | IF=50mA**      |

‡ Radiated Power is measured by G8370-85.

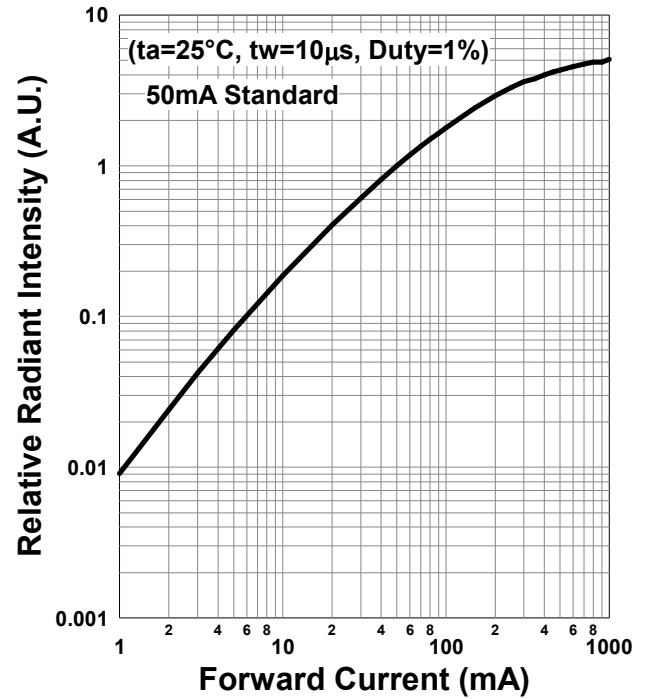
‡ Radiant Intensity is measured by ANDO Optical Multi Meter AQ2140 & AQ2743.

## Typical Characteristic Curves

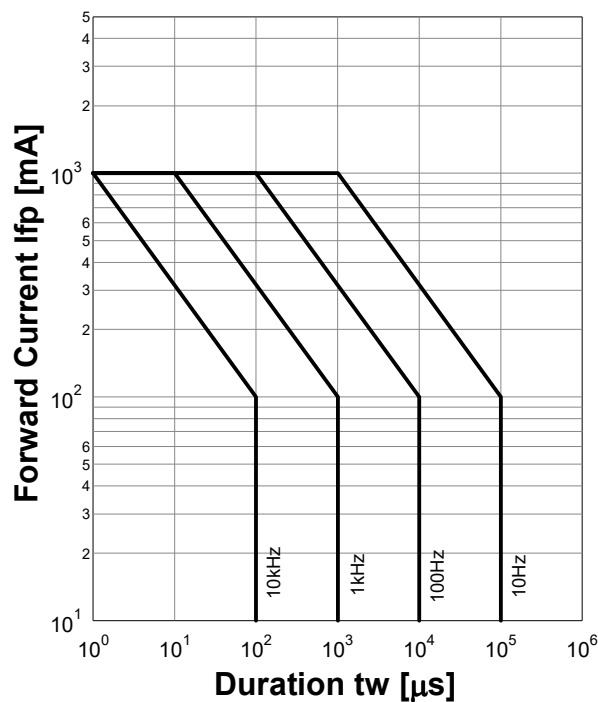
**Forward Current - Forward Voltage**



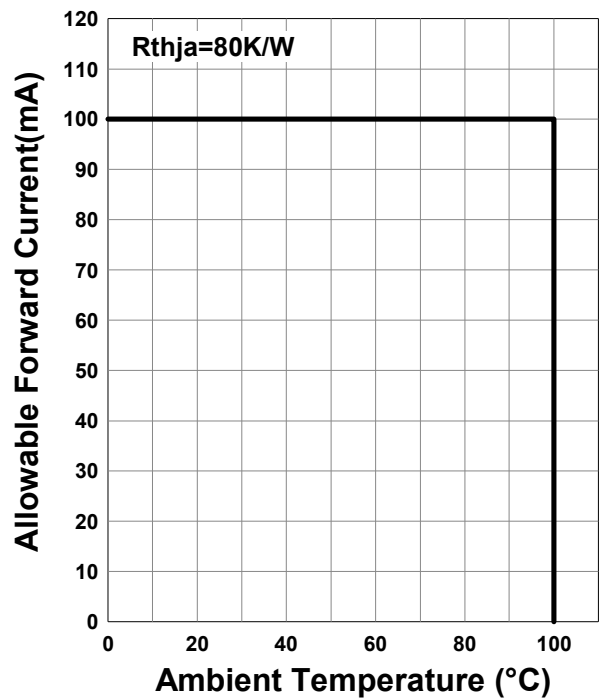
**Relative Radiant Intensity - Forward Current**

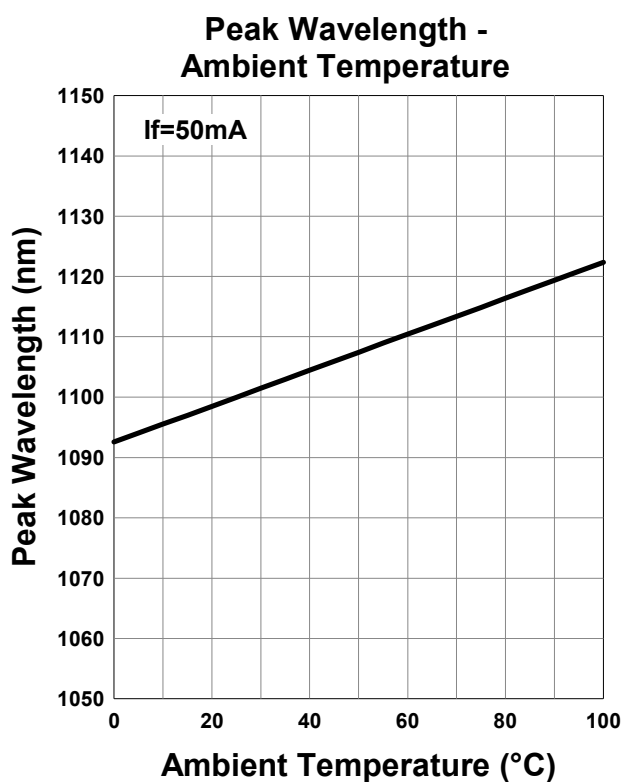
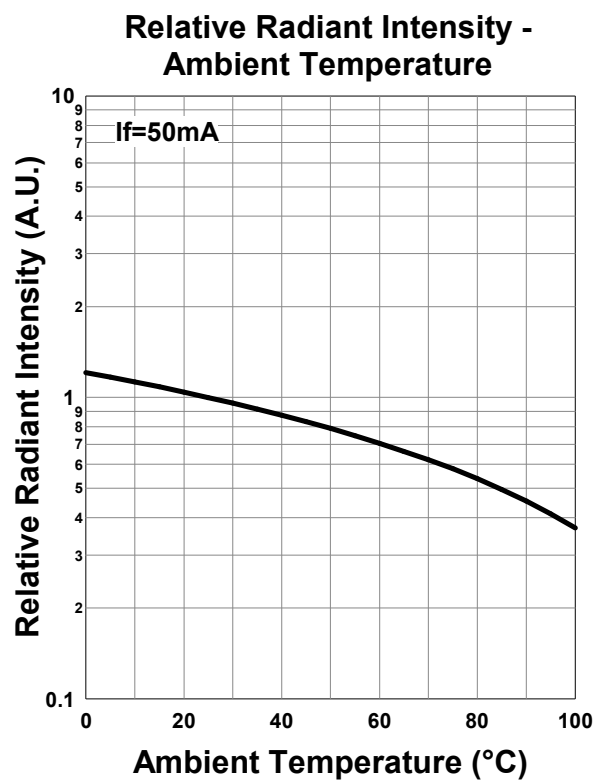
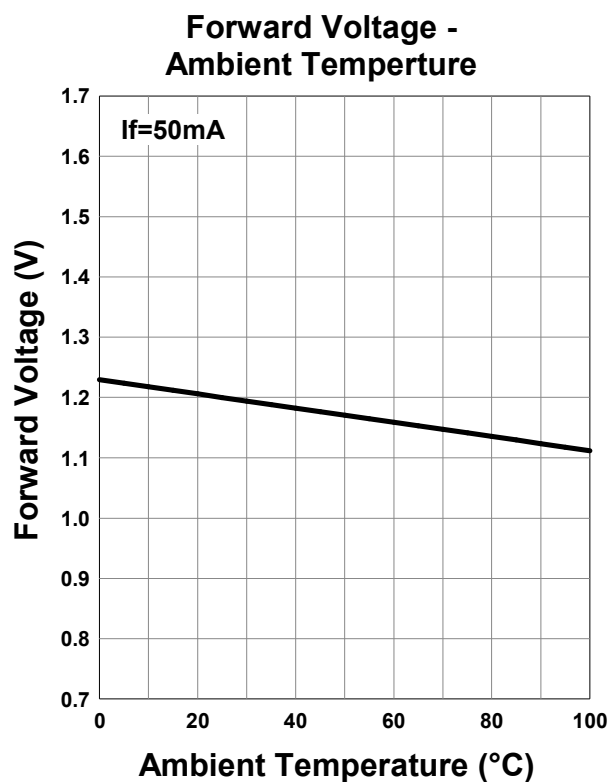


**Forward Current - Pulse Duration**

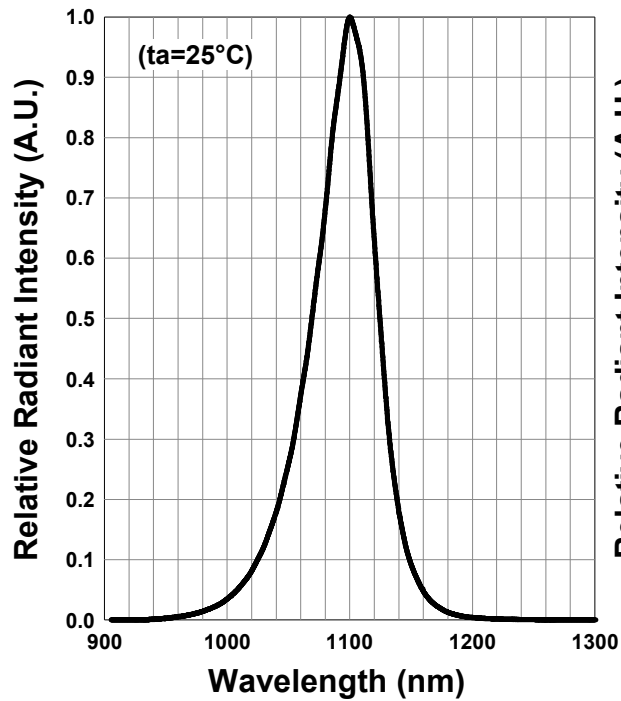


**Allowable Forward Current - Ambient Temperature**

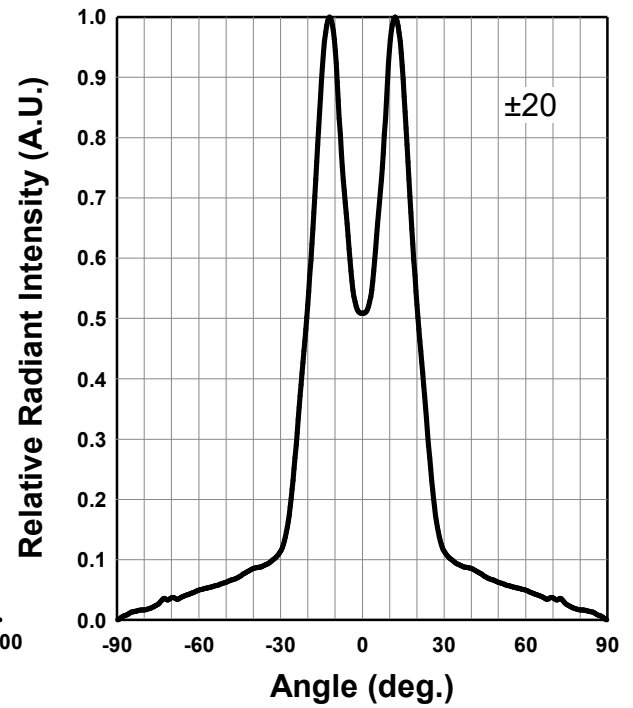




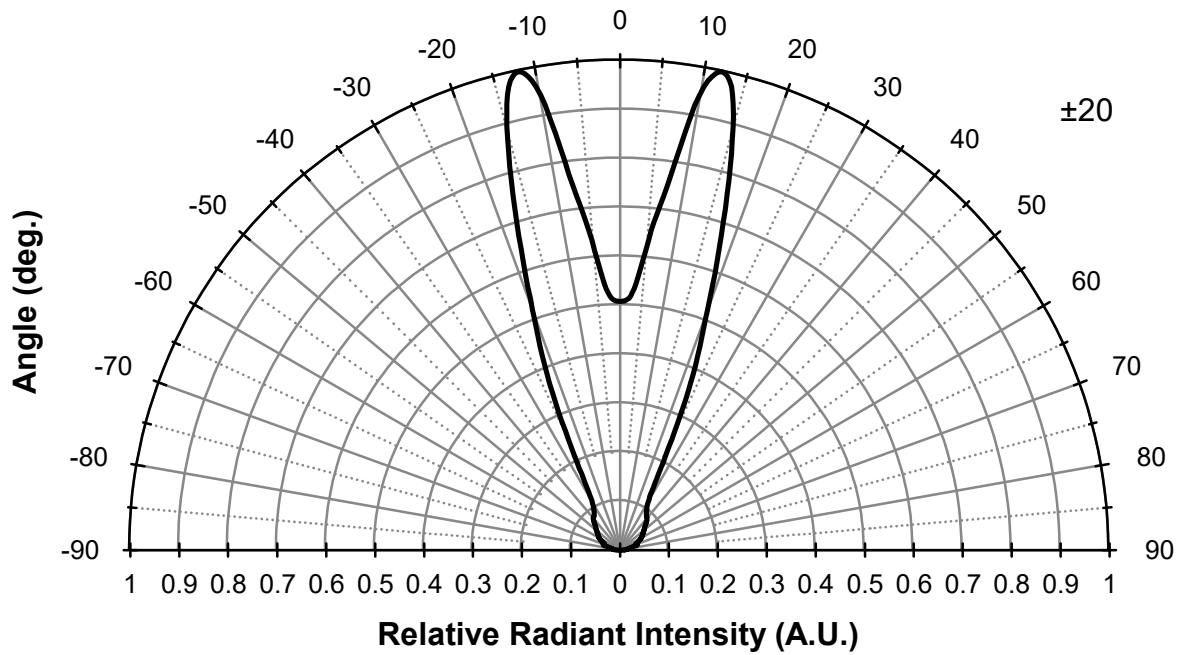
**Relative Spectral Emission**



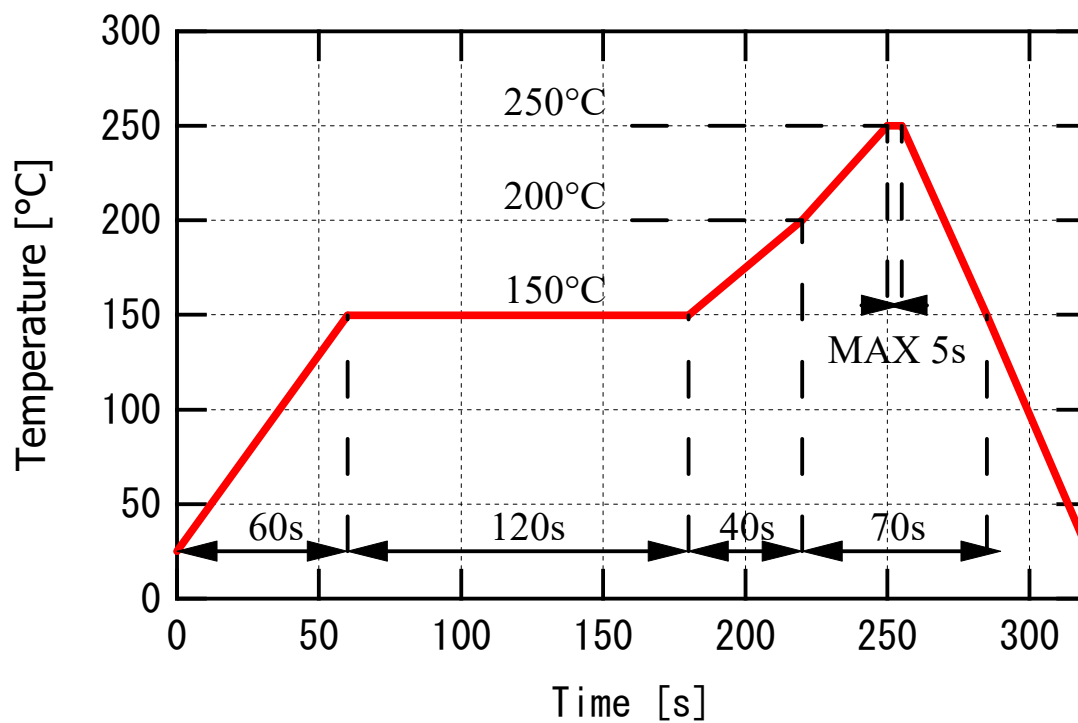
**Radiation Characteristics**



**Radiation Characteristics**



## Recommended Reflow Soldering Profile



## **Wrapping**

Moisture barrier bag aluminum laminated film with a desiccant to keep out the moisture absorption during the transportation and storage.

## **SMD LED storage and handling precautions**

### **Storage Conditions before Opening a Moisture-Barrier Aluminum Bag**

- Before opening a moisture-barrier aluminum bag, please store it at <30°C, <60%RH.
- Please note that the maximum shelf life is 12 months under these conditions.

### **Storage Conditions after Opening a Moisture-Barrier Aluminum Bag**

- After opening a moisture-barrier aluminum bag, store the aluminum bag and silica gel in a desiccator.
- After opening the bag, please solder the LEDs within 72 hours in a room with 5 - 30°C, <50%RH.
- Please put any unused, remaining LEDs and silica gel back in the same aluminum bag and then vacuum-seal the bag.
- It is recommended to keep the re-sealed bag in a desiccator at <30%RH.
- The 72-hour- long floor life does not include the time while LEDs are stored in the moisture-barrier aluminum bag. However, we strongly recommend to solder the LEDs as soon as possible after opening the aluminum bag.

### **Notes about Re-sealing a Moisture-Barrier Aluminum Bag**

- When vacuum-sealing an opened aluminum bag, if you find the moisture-indicator of the silica gel has changed to pink from blue (indicating a relative humidity of 30 % or more), please do not use the unused LEDs, the aluminum bag, or the silica gel.

### **Notes about Opening a Re-sealed Moisture-Barrier Aluminum Bag**

- When opening a vacuumed and re-sealed aluminum bag in order to use the remaining LEDs stored in the bag, if you find that the moisture-indicator of the silica has changed to pink, please do not use the LEDs.

**Disclaimer**

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Product data and parameters in this catalog are typical values based on reasonably up-to-date measurements.

Product data and parameters may vary by user application and over time.

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